Escaping Patriarchy: Familial Insularity and Gender Attitudes in Oman

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Abstract

In many societies, women's social worlds are largely confined to family networks, limiting their interaction with the broader community. We examine how such social insularity shapes women's cultural values by studying marriage among kin in Oman, where, like in much of the broader region, more than a third of marriages are between first cousins. Using quasi-random variation in the availability of marriageable male cousins as an instrumental variable, we find that marrying outside one's extended family leads to significantly more progressive gender attitudes (0.6 SD on our composite index). Remarkably, these attitudinal changes occur even as out-marriage leads to earlier marriage arrangements and less schooling. The shift in gender attitudes appears to operate primarily through dramatic changes in social exposure: out-marriage reduces daily contact with parents and in-laws and decreases the likelihood of living in close proximity to one's extended family. These findings highlight the substantial role of social insularity in maintaining traditional gender values.

1 Introduction

Traditional values thrive in closed social worlds. In many societies, women's lives are particularly circumscribed, with social circles limited primarily to family members through overlapping practices: marriage within extended family creates dense kinship networks, female seclusion restricts contact with non-relatives, and women move directly from father's to husband's authority without establishing independent social connections. These practices maintain traditional values both by increasing contact with like-minded family members and by raising the costs of disagreement with relatives who hold similar conservative views.

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We study how such insularity shapes women's cultural values by examining what happens when one key element, marriage within extended family networks, is disrupted. Using data from Oman, where approximately 40% of marriages are between first cousins (Islam, 2012), we leverage quasi-random variation in the availability of cousin-husbands to identify the causal effect of marrying outside family networks. This variation effectively 'treats' some women with marriage to non-relatives based solely on whether they happened to have male cousins of marriageable age.

Our research design exploits this demographic variation in the availability of marriageable cousins, creating a natural experiment in marriage patterns: women with fewer marriageable-age male cousins are systematically more likely to marry a husband who is not their first cousin, which we refer to as 'out-marriage'. We examine these dynamics using survey data from 1,538 women aged 25-50 across eight villages in rural Oman, where we collected detailed information about extended family composition, marriage outcomes, and attitudes regarding gender roles.

Our first stage results demonstrate a strong relationship between the availability of marriageable male cousins and out-marriage. Having one fewer male cousin of marriageable age increases a woman's probability of out-marriage by 7.2 percentage points, primarily increasing marriage to non-relatives by 4.4 percentage points. This relationship is specific to male cousins within the typical spousal age range (similar age or somewhat older) and does not extend to female cousins or male cousins too distant in age, suggesting we are picking up a direct marriage market effect, and not some other characteristics of extended families. The first stage F-statistic of 61 is well above conventional thresholds for weak instruments. Supporting the validity of our instrument, we find no significant correlations between the number of marriageable male cousins and predetermined characteristics such as height, age of menarche, father's education, or family wealth.

Using this instrument, we study the impact of out-marriage on gender attitudes through four key measures: whether men make better political leaders than women, whether men are better at business, whether men should have priority for scarce jobs, and whether university education is more important for boys than girls. The baseline responses reveal strongly traditional gender attitudes in our sample: 87% believe men make better political leaders, 89% think men should have priority for jobs when scarce, and 63% say men are better at business. Against this backdrop of conservative gender norms, we show that out-marriage significantly shifts women toward progressive values. Out-marriage leads women to hold gender attitudes 0.6 standard deviations more progressive than they would otherwise.

This effect appears to operate through social exposure. Women who marry out have more diverse social networks: they are 39 percentage points less likely to see parents and in-laws daily. This pattern of social connections provides regular exposure to different perspectives and worldviews. While women who marry first cousins remain embedded in dense family networks that reinforce conservative values, those who marry others encounter a broader range of attitudes through their marital families and social circles.

Remarkably, these attitudinal changes occur even though out-marriage leads to outcomes typically associated with lower female empowerment. We find that out-marriage leads to earlier mar-

riage (22 percentage points more likely to marry by age 16) and lower educational attainment (21 percentage points less likely to complete grade 12). Their labor force participation remains just as low, and their husbands are less educated and poorer.

The fact that out-marriage leads to more progressive attitudes despite lower education and earlier marriage suggests that social insularity, rather than formal institutions, plays the dominant role in maintaining traditional values among women. While a large literature emphasizes how education and economic development drive cultural change, our results highlight the core role of everyday social interactions in shaping cultural attitudes. In societies where cousin marriage is common, these marriage patterns create closed networks that can effectively resist external influences—even as formal schooling expands and women gain greater access to mass media and communications technology. When daily social contact remains concentrated within conservative family networks, these networks can reinterpret and filter outside influences through a traditional lens, helping explain the persistence of traditional attitudes even as societies modernize along other dimensions.

These findings contribute to three main literatures. First, we add to research on the determinants of gender attitudes. While existing work emphasizes how social norms affect women's opportunities (Bursztyn et al., 2020; Fernández, 2013) and highlights the role of education, labor markets, and religion (Fortin, 2005; Guiso et al., 2003; Inglehart and Norris, 2003), as well as historic 'deep' factors (Alesina et al., 2013), we provide causal evidence that marriage patterns—specifically cousin marriage—independently reinforce conservative gender attitudes. Our results suggest that social network structure may be as important as formal institutions in shaping women's cultural values.

Second, we contribute to a growing literature on the effects of intensive kinship and cousin marriage. Beyond the well-known health effects (Hwang et al., 2024), recent research has examined impacts on economic cooperation (Jacoby and Mansuri, 2010; Do et al., 2013; Mobarak et al., 2013), mobility (Ghosh et al., 2023), and broader cultural evolution (Henrich, 2020; Schulz et al., 2019; Schulz, 2022). We add an important cultural dimension by demonstrating how family structure shapes both the transmission and maintenance of gender attitudes across generations, particularly through the intensification of intergenerational contact and the creation of overlapping family relationships that reinforce traditional norms.

Finally, we contribute to the literature on the persistence of cultural norms. Prior research has examined how traditional attitudes endure through institutional structures (Alesina and Giuliano, 2015; Giuliano and Nunn, 2021) and intergenerational transmission mechanisms (Bisin and Verdier, 2000, 2011). Our work highlights how marriage practices that intensify family ties help perpetuate conservative gender norms even as societies modernize along other dimensions. By identifying social insularity as a key mechanism for cultural persistence, we help explain why traditional gender attitudes can remain resilient despite increasing female education and economic development.

These findings have important implications for cultural change in traditional societies. While development efforts often focus on expanding formal education and economic opportunities for

women, our results suggest these interventions may have limited impact when women remain embedded in closed family networks. The persistence of traditional attitudes among educated women who marry cousins highlights how social isolation can trump formal institutions.

This mechanism may extend beyond cousin marriage to other practices that limit women's social connections, from gender segregation to restrictions on independent movement. In contexts where traditional practices create dense, overlapping family networks, interventions that expand women's social circles may be crucial for shifting cultural values—even in the presence of rising education levels and increased access to outside information.

2 Conceptual Framework

In this section, we present a framework for understanding how marriage patterns shape cultural values through their effects on social network structure and exposure to different worldviews. We focus on how marriage determines daily social interactions, and how these interaction patterns subsequently influence cultural attitudes.

Marriage to first cousins versus non-relatives fundamentally transforms women's social networks. Cousin marriage creates overlapping relationships where in-laws are simultaneously blood relatives, intensifying family bonds with particularly important implications for women's status and attitudes (Tillion, 1983). In contrast, marriage to non-cousins introduces connections to new family networks. This structural difference has several important implications for women's social environments.

One key implication concerns geographic proximity. When families are linked through cousin marriage, they often cluster together geographically. Ghosh et al. (2023) demonstrate that cousin marriage significantly reduces geographic mobility, keeping families rooted in close proximity to one another. This geographic clustering naturally facilitates more frequent interaction and oversight from extended family members, potentially reinforcing traditional values across generations.

Beyond geography, marriage patterns also shape the diversity of women's social interactions. As Henrich (2020) argues, intense kinship systems like those reinforced by cousin marriage reduce interaction with and trust towards people outside the family circle. Women who marry first cousins often find their daily social contacts concentrated within a homogeneous family network that likely shares similar values and worldviews. In contrast, women who marry non-relatives typically engage with more diverse social networks, potentially exposing them to different perspectives on gender roles and family life.

These network structures influence cultural values through several reinforcing mechanisms. First, the frequency and type of social interactions affect what attitudes and behaviors women regularly observe. Dense family networks often mean most interactions occur with people sharing similar backgrounds and values, creating what might be described as "echo chambers" where traditional perspectives are constantly reinforced. More diverse networks, by contrast, expose women to a broader range of viewpoints, life patterns, and role models. Women in these networks may encounter examples of different ways of living, such as women pursuing education or employment,

that shape their views of what is possible or desirable. These examples provide concrete demonstrations that alternatives to traditional gender roles are viable, particularly when they come through trusted connections like marital family members.

Second, network structure influences the social costs of adopting new attitudes. In the overlapping family networks created by cousin marriage, deviating from traditional values risks damaging multiple important relationships simultaneously. As both sets of parents may share similar traditional values and expectations, women face unified pressure to conform to established gender roles. In more diverse networks resulting from out-marriage, these costs may be lower, as women have access to alternative sources of social support and validation for new attitudes.

While our framework emphasizes how marriage patterns shape cultural values through social networks, marriage type may also affect other outcomes through distinct market mechanisms. In societies where female chastity is highly valued, marriages to non-relatives often occur earlier than cousin marriages due to information asymmetries. When considering non-relative marriages, the groom's family faces uncertainty about the bride's behavior and may prefer younger brides to minimize perceived risks. Cousin marriages, by contrast, reduce these information problems because families have greater opportunity to monitor and directly observe potential brides through regular family interaction and geographic proximity. This ongoing visibility provides assurance about a young woman's reputation without requiring early marriage as a signal of virtue.

Additionally, cousin marriages enable more credible commitments through family ties. Related families can support arrangements that allow young women to complete more education before marriage, as both sides have reputational stakes within the shared family network. Without these family-based assurances, parents arranging non-relative marriages may pursue earlier weddings to secure matches before options diminish, despite the potential for more progressive outcomes in other dimensions. These forces help explain why women who marry non-relatives might simultaneously experience earlier marriage and develop more progressive attitudes. The marriage market effects operate through different channels than the social network mechanisms that shape cultural values.

3 Data and Empirical Strategy

3.1 Survey Data and Variable Construction

Our research design relies on constructing an instrumental variable based on the number of marriageable cousins available to an individual. To implement this strategy, we conducted a survey of women in the Dakhliya region of Oman, collecting detailed information about their extended families, particularly their cousins. The survey was conducted in three villages in the wilayat (district) of Bid Bid in 2007 and five villages in the wilayat of Nizwa in 2009. Both are rural areas, shown on a map in Appendix Figure A.1.

Our primary outcome is an index of gender attitudes, composed of four variables measured on 4-point Likert scales. The index incorporates questions about women's role in society: whether jobs should be allocated based on gender when scarce, whether women can be effective political

leaders, whether women can succeed in running businesses, and whether university education is equally important for females and males. A higher value on the index represents more progressive, egalitarian views toward gender roles. We construct a variance-weighted index following Anderson (2008), which creates a weighted average of the standardized measures, giving more weight to variables containing more unique information.

To understand the mechanisms through which marriage patterns affect gender attitudes, we examine family network characteristics that capture social exposure. These include geographic proximity to parents and in-laws (whether living within 1 kilometer), and frequency of interaction (whether seeing them daily). These measures are central to our analysis as they directly capture how deeply women are integrated into extended family networks, which we hypothesize is a key channel through which marriage patterns influence cultural values. We also collect data on proximity to and interaction with siblings to assess the broader family network structure.

Additionally, we examine education-related outcomes including years of schooling completed and an indicator for completing grade 12, as well as marriage-related outcomes such as age at marriage, length of engagement, and indicators for early marriage. These variables allow us to test whether human capital accumulation or other life course changes mediate the relationship between marriage patterns and gender attitudes.

Our treatment variable is a binary indicator for out-marriage, equaling 1 if the respondent's first marriage was to someone other than a first cousin, and 0 otherwise. To address potential endogeneity in marriage choices, we construct an instrumental variable based on the availability of potential cousin-husbands. This variable, $MarriageableCousins$, is a weighted sum of the respondent's male cousins, where the weights reflect each cousin's suitability as a potential husband based on their age difference. The weights are derived from the observed distribution of husband-wife age gaps in our sample (shown in Appendix Figure A.3), normalized so that a cousin three years older than the respondent (the modal age gap) has a weight of 1.

Formally, for each woman i, we calculate:

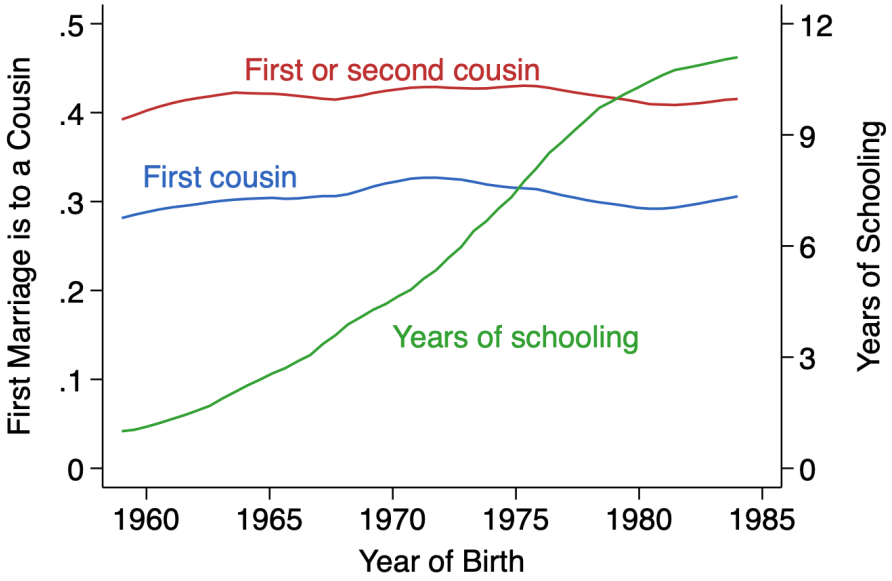
$$MarriageableCousins_i = \sum_{j \in \mathcal{M}_i} w(\text{AgeDiff}_{ij}) \tag{1}$$

where $\mathcal{M}_i$ is the set of male cousins of woman i who survived until age 12, $w(\cdot)$ is the weight function derived from the age difference density, and AgeDiff_{ij} is the age difference between cousin j and woman i. We include only cousins who survived until age 12, as these are likely to have been in the respondent's pool of potential husbands when her marriage was arranged. Having fewer marriageable male cousins increases the likelihood that a woman will marry outside her extended family network, potentially exposing her to more diverse social influences beyond her kinship group.

3.2 Sample Description and Summary Statistics

The sample comprised all women between ages 25 and 50 in the selected villages. In Bid Bid, this sampling rule yielded 876 women of whom 780 agreed to be interviewed (89% response rate);

Figure 1: Trends in Cousin Marriage and Female Education by Birth Cohort



Notes: This figure shows the proportion of women whose first marriage was to a first cousin (blue line) or to either a first or second cousin (red line), plotted against birth cohort (left axis). The green line shows the average years of schooling completed by women in each birth cohort (right axis).

in Nizwa, 846 of the 857 women agreed to be interviewed (99% response rate). Of these 1637 respondents, we drop 34 due to missing data on key variables such as age, ever married, or marriage to a first cousin.

The survey asked respondents to enumerate all aunts and uncles and then all first cousins, including each cousin's age, sex, and survival until age 12. The reported total number of cousins ranged from 0 to 138. We omit respondents who report having zero cousins, as this is highly unlikely in a high-fertility country such as Oman and likely represents non-response. We also trim the top 1% of the distribution (those with more than 97 cousins), as the detailed information about cousins' ages is likely less accurate for respondents reporting such large numbers. These restrictions reduce our sample by 66 respondents to 1,538.

Figure 1 presents the prevalence of cousin marriage and educational attainment by birth year in our cross-sectional sample. Rates of cousin marriage among women in our sample, which includes birth cohorts from 1960 to 1985, remain consistently stable over time, with first cousin marriage rates around 30%. The same cross-sectional data show a substantial increase in female educational attainment across these birth cohorts, with average years of schooling rising from less than 1 year for women born in 1960 to approximately 11 years for those born in 1985. Despite this educational expansion, which coincided with Oman's economic development following the oil boom of the 1970s, cousin marriage rates show no notable decline among the birth cohorts in our sample.

Table A.1 presents the summary statistics for our key variables. Panel A shows balance variables, which are characteristics unlikely to be influenced by the choice of spouse: age, height, age of

menarche, number of siblings, birth order, whether the respondent or her father has any schooling, and father's land ownership. Panel B presents cousin-related variables, including our key measure of marriageable cousins. On average, women in our sample have 32.7 total cousins, with 2.18 male cousins of marriageable age (weighted by typical spouse age difference) and a similar number (2.24) of female cousins in the same age range.

Panel C presents marriage-related statistics. Our sample includes all women aged 25-50, regardless of marital status, since the availability of male cousins could affect both whether and whom a woman marries. In our sample, 89% of women have been married. The distribution of marriage types reveals the prevalence of consanguineous unions: 27% married first cousins, 10% married second cousins, and 9% married other relatives, while 42% married non-relatives. Among those who have married, the average age at marriage is 17.5 years, with 44% married by age 16. The typical engagement period is relatively short at 0.56 years (about 7 months).

Panel D covers demographic outcomes, indicating that women are on average 18.5 years old at first birth, have had 5.2 children, and experienced 5.7 pregnancies. Geographic proximity and social interaction patterns reveal the importance of extended family networks: 47% of women live within 1 km of their parents, and 50% see them daily. Similarly, 37% live within 1 km of their in-laws, while 26% see their in-laws daily. These patterns suggest significant integration into extended family networks, particularly for women who marry relatives. Finally, Panel E presents socioeconomic variables: only 14% of women are employed, highlighting the limited female labor force participation in this setting. The average years of education is 7.33, with 35% having completed grade 12.

The last two columns, labeled "Relation with instrument," present regressions examining the relationship between each variable and the number of male marriageable-age cousins (our instrument). Each regression controls for the number of female marriageable-age cousins, birth order, age, age squared, and village fixed effects. This allows us to assess whether our instrument is correlated with pre-marriage characteristics and potential outcomes of interest.

Most pre-marriage characteristics (Panel A) show no significant correlation with our instrument, supporting its validity. However, we observe significant relationships between our instrument and various outcomes. Having an additional marriageable-age male cousin increases the probability of marriage to a first cousin by 5.9 percentage points, while decreasing the likelihood of marrying a second cousin by 1.6 percentage points and a non-relative by 4.5 percentage points (Panel C). These strong correlations form the basis of our first-stage relationship. The instrument is also negatively associated with early marriage (marriage by age 16) and positively associated with engagement length, suggesting that the availability of cousin-husbands delays marriage formalization.

Women with more marriageable-age male cousins are more likely to live near and see their parents and in-laws daily (Panel D), consistent with our social network hypothesis. They also have slightly higher odds of completing grade 12 (1.3 percentage points per additional cousin) and their husbands have higher incomes (2.9% higher per additional cousin). These outcomes point to better socioeconomic outcomes for women who marry within their extended family, contrary to typical narratives about cousin marriage but consistent with anthropological evidence from this region

suggesting that higher-status families may be more likely to practice cousin marriage.

3.3 Empirical Strategy

Our empirical strategy aims to estimate the causal effects of marrying outside traditional family networks using an instrumental variables (IV) approach. Our main specification is

$$GenderAttitudes_i = \alpha + \beta \cdot OutMarriage_i + X_i \cdot \gamma + \varepsilon_i, \tag{2}$$

where $GenderAttitudes_i$ is our gender attitudes index for woman i, with higher values indicating more progressive views. $OutMarriage_i$ is our main explanatory variable, indicating marriage to someone other than a first cousin, and X_i is a vector of control variables including the woman's age and other relevant individual characteristics.

However, estimating this equation using OLS may lead to biased results due to omitted variables. Women who marry outside their extended family may differ systematically from those who do not in ways that also affect our outcomes of interest. To address this endogeneity concern, we employ an instrumental variables (IV) approach.

Our IV strategy relies on quasi-random variation in the availability of potential cousin-husbands. Our instrument is the number of marriageable male cousins, as described in section 3.1.[1] The first-stage regression is:

$$\begin{aligned} OutMarriage_i = \alpha + \delta \cdot MarriageableCousins_i + \\ \lambda \cdot FemaleMarriageableAgeCousins_i + X_i \cdot \gamma + u_i \end{aligned} \tag{3}$$

where $FemaleMarriageableAgeCousins_i$ is the female equivalent of $MarriageableCousins_i$, using the same weights for the age distribution. We use this to isolate quasi-random variation in the instrument.[2] This ensures that our instrument captures the effect of having fewer marriageable cousins, rather than simply having fewer cousins in general. The vector of controls X_i consists of age, age squared, birth order, and village fixed effects.

We then use the predicted values from this first stage to estimate the causal effect of out-marriage in a second-stage regression analogous to equation 2. This IV approach allows us to estimate the local average treatment effect of marrying outside the family on our outcomes of interest, under the assumption that $MarriageableCousins_i$ affects these outcomes only through its effect on marriage choices.

Our instrumental variable estimates represent local average treatment effects (LATE) for the subset of women who are "compliers." These are women who marry outside the family only because

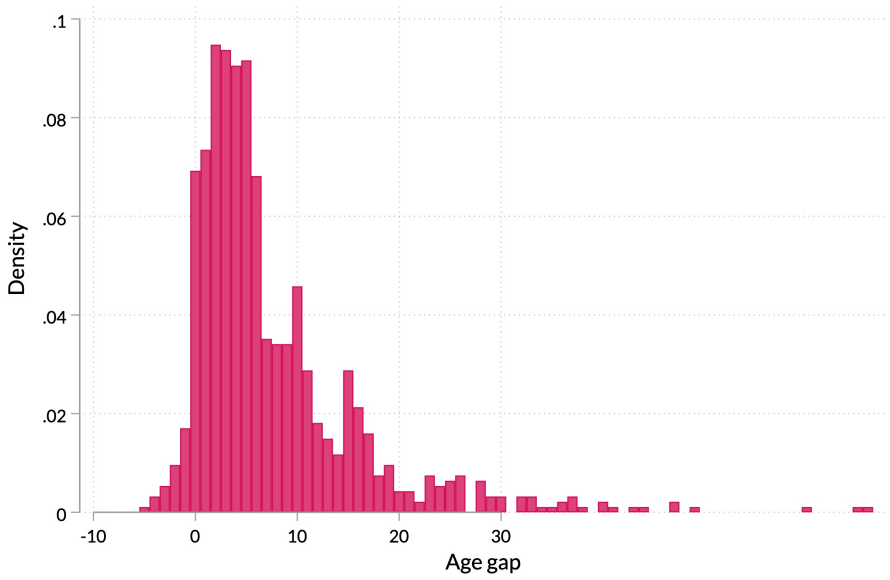
[1] We show robustness to instead using a simple sum of male cousins 0 to 6 years older after presenting our main results.

[2] Unlike in China and much of South Asia, there seems to be limited sex selection in Oman and the Arab Gulf more generally [*Add a ref, or refer to male/female split of cousins in Table 1 (summ stats)*].

they lack marriageable male cousins. Given the strong cultural preference for cousin marriage in this context, we expect this complier population to be substantial.

To construct our instrument, we first examine marriage patterns by age. Figure 2 displays the distribution of spousal age differences among couples in our data. The histogram reveals that marriages typically involve husbands who are a few years older than their wives. We use this empirical distribution to derive the age-based weights in our instrument construction, which help us identify cousins of appropriate marriageable age.

Figure 2: Age difference in marriages that are not between first cousins

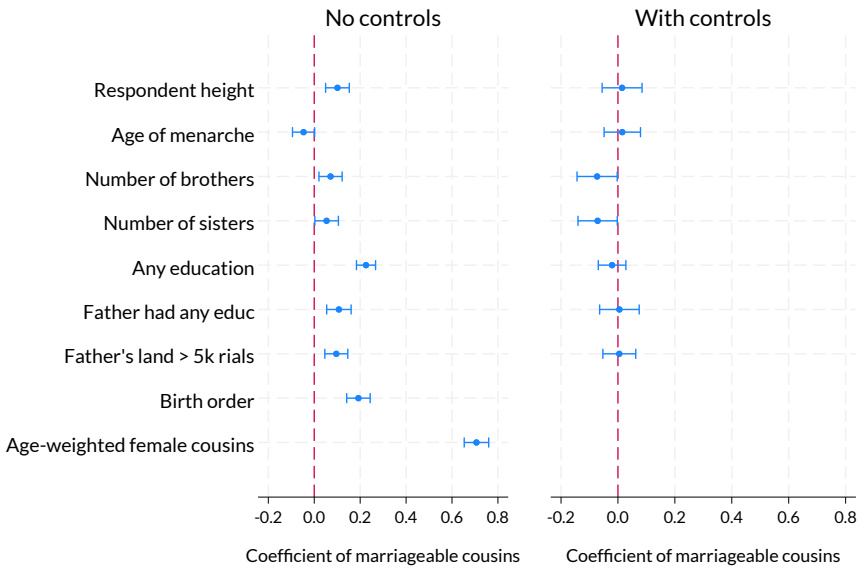


Notes: Shows husband's age - wife's age

Figure 3 presents balance tests examining the relationship between our instrument and pre-determined characteristics. We find no significant relationships with variables such as respondent height, age of menarche, number of siblings, birth order, education, or father's characteristics. This lack of correlation with pre-determined characteristics supports the validity of our instrument.

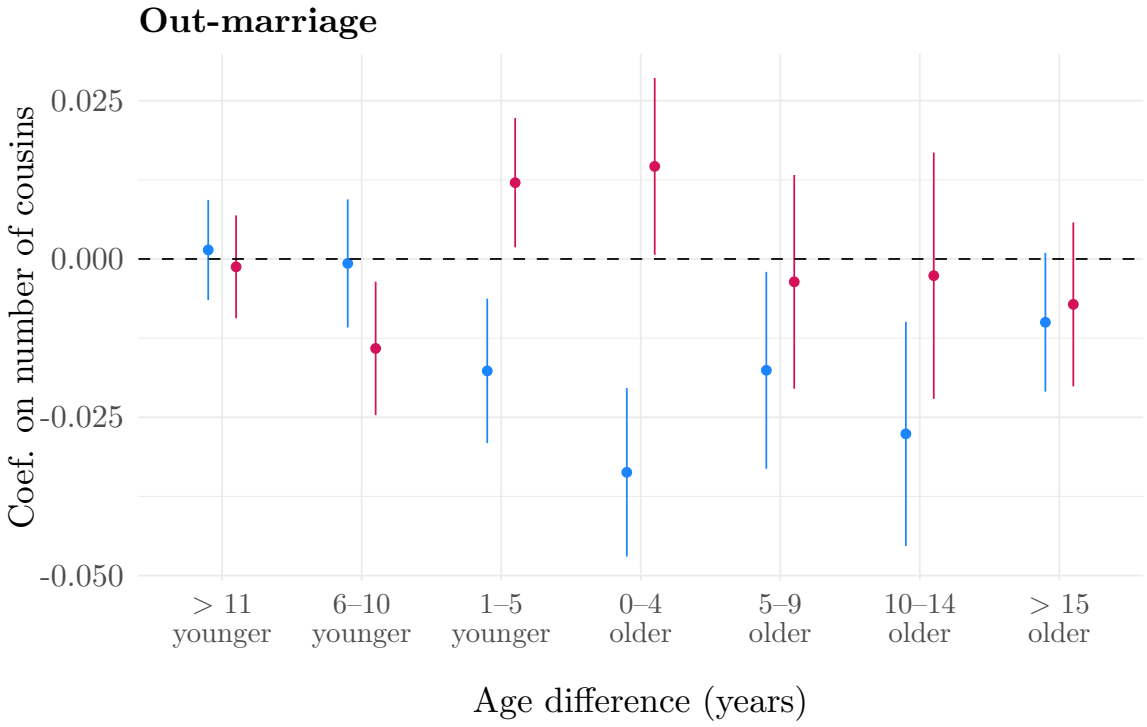
To provide non-parametric evidence that our age-weighted measure captures relevant variation, Figure 4 shows how the likelihood of out-marriage varies with the number of cousins by age difference and gender. The pattern is striking: having an additional male cousin who is slightly older than the woman (0-4 years older) decreases her probability of out-marriage by about 3.1 percentage points. This effect gradually diminishes for male cousins outside this age range. In contrast, the number of female cousins shows a much weaker relationship with marriage patterns.

Figure 3: First stage balance



Notes: Regressions are the relevant balance variable on the instrument: the number of age-weighted male cousins. Robust standard errors are used in all regressions. Whiskers indicate 95% confidence intervals. Controls include female marriageable-age cousins, age (quadratic), village fixed effects, and birth order.

Figure 4: First stage effect on out-marriage, by age bin

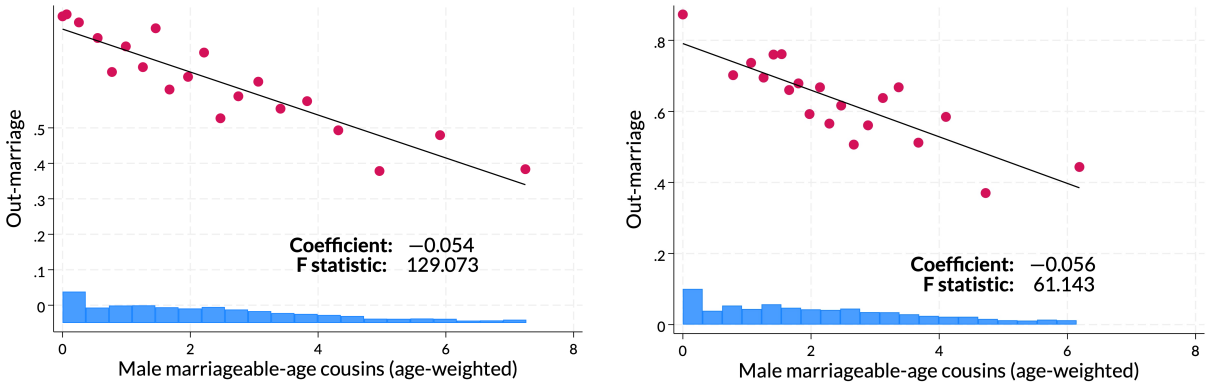


Notes: Figure shows regression coefficients for a first stage regression of "marrying a cousin" on the number of cousins by age and gender bin. Includes controls for age (squared), village, and birth order.

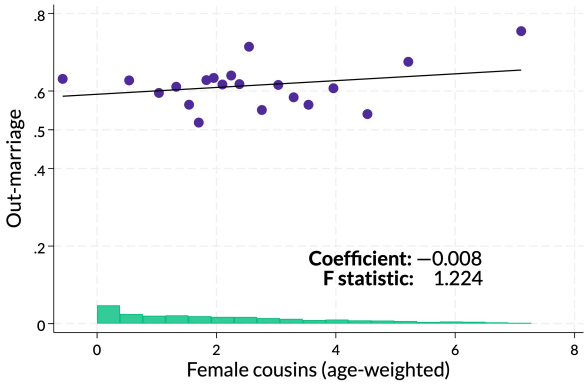
Figure 5: First stage relationship and placebo test

(a) First stage without controls

(b) First stage with controls



(c) Placebo: Female cousins

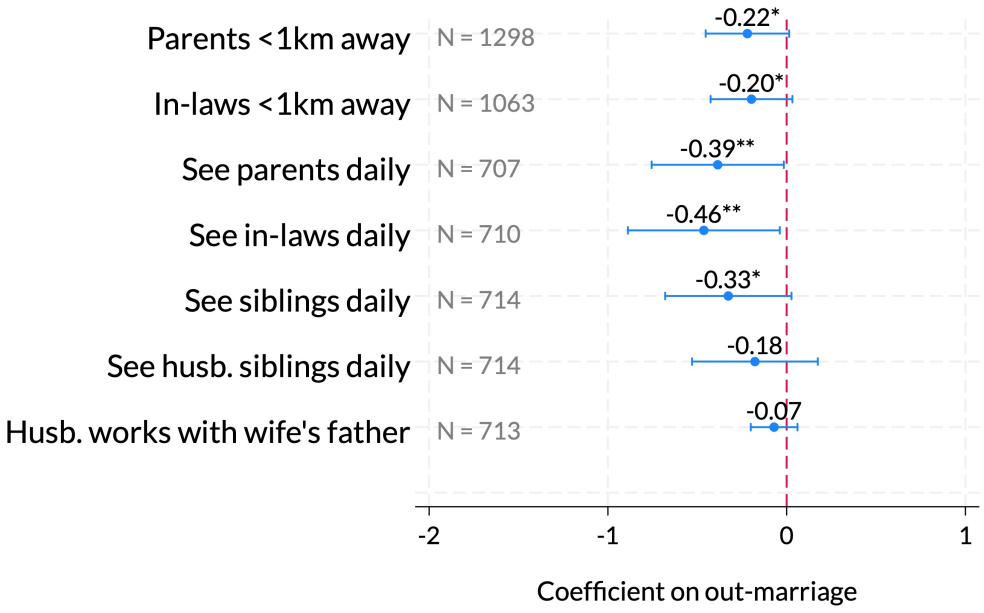


Notes: Panel (a) presents the relationship between the number of marriageable male cousins (age-weighted) and the likelihood of being married to a first cousin, without controls. Panel (b) includes controls for female marriageable-age cousins, age (quadratic), village fixed effects, and birth order. Panel (c) serves as a placebo test, showing the relationship with female cousins. Robust standard errors are used in all regressions.

Panel (a) of Figure 5 shows the relationship between our instrument and the probability of out-marriage without controls. Panel (b) adds our standard set of controls: female marriageable-age cousins, a quadratic in age, and village fixed effects. The relationship remains robust with controls, with an F-statistic of 61, well above conventional thresholds for weak instruments. Panel (c) shows a placebo test using female cousins, which reveals no relationship with marriage patterns once we control for male cousins. This suggests our instrument captures marriage market constraints rather than general family characteristics.

Supporting this interpretation, Appendix Table A.4 shows that age-weighted male cousins of a particular type (e.g., sons of father's brothers) only predict marriage patterns for that specific relationship. For example, an additional age-weighted son of a mother's sister decreases out-marriage by 6.1 percentage points specifically through increased marriage to mother's sister's sons, with no effect on other marriage types. This pattern holds across all first cousin relationship types,

Figure 6: Impact of out-marriage on family contact



Notes: Figure shows IV estimates of the effect of out-marriage on various measures of family contact and proximity. All specifications include controls for age (quadratic), village fixed effects, birth order, and the number of female marriageable-age cousins. Sample size for each outcome shown on left. Bars represent 95% confidence intervals. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

providing further evidence that our instrument captures marriage market opportunities.

Appendix Table A.3 explores the robustness of our first stage results to alternative specifications of the instrumental variable. Our baseline specification (Column 1) uses the age-weighted measure of marriageable male cousins. Column 2 presents a simpler alternative that counts male cousins 0-6 years older than the respondent, which yields similar but slightly weaker results. Column 3 applies the inverse hyperbolic sine (IHS) transformation to the age-weighted count, strengthening the first stage relationship (F = 76). Column 4 presents results using a trimmed version of our instrument that excludes outliers.

4 Results

4.1 Effects on Family Contact and Gender Attitudes

Our analysis reveals that out-marriage fundamentally transforms women's social worlds, dramatically reducing their daily contact with extended family members. This reduced social insularity is accompanied by substantially more progressive gender attitudes.

Figure 6 documents how out-marriage substantially reduces the intensity of contact with extended family members. Out-marriage causes a 39 percentage point reduction in the likelihood of seeing parents daily and a 46 percentage point reduction in seeing in-laws daily. This impact extends

to siblings as well, with out-marriage leading to a 33 percentage point reduction in daily sibling interaction. These large effects demonstrate that out-marriage fundamentally alters women's daily social interactions.

The change in social networks is reinforced by geographic dispersion. Out-marriage causes a 22 percentage point reduction in the likelihood of living within one kilometer of parents and similar reductions in proximity to in-laws (20 percentage points). This geographic separation naturally reduces the frequency of regular contact and family oversight.

These effects represent substantial changes in women's social environments. Among women who marry first cousins, about half maintain intensive daily contact with parents (55%), in-laws (35%), and siblings (48%). Out-marriage cuts this contact by more than half, reducing the centrality of extended family in women's social worlds.

This dramatic reduction in family contact coincides with a substantial shift toward more progressive gender attitudes. Figure 7 illustrates this effect through three panels. Panel A shows the reduced form relationship between our instrument (marriageable male cousins) and the gender attitudes index, demonstrating that women with fewer marriageable male cousins, and consequently a higher likelihood of out-marriage, hold more progressive gender attitudes. Panel B presents a placebo test using female cousins, confirming that our results are not driven by family size or other confounding factors.

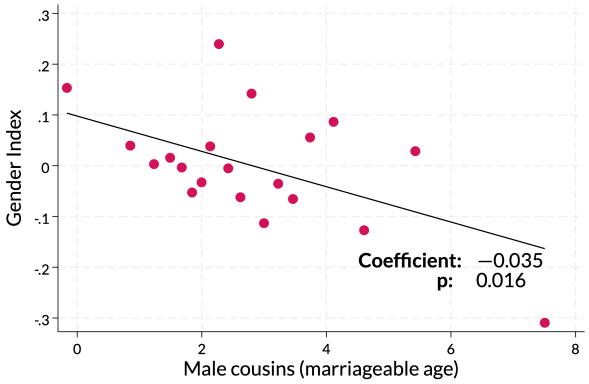
We find that marrying outside the family increases our index of progressive gender attitudes by 0.62 standard deviations (significant at the 5% level). This suggests that escaping traditional family networks through out-marriage leads women to develop substantially more egalitarian views about gender roles.

Breaking down the gender attitudes index into its components reveals significant effects across multiple dimensions, as shown in Panel C of Figure 7. Out-marriage has the strongest impact on views about leadership capabilities, increasing support for women as political leaders by 1.16 standard deviations (significant at the 5% level) and recognition of women's business leadership abilities by 0.97 standard deviations (significant at the 10% level). While the effect on support for gender equality in job opportunities is positive (0.35 standard deviations), it is not statistically significant. Out-marriage has no detectable effect on views about educational equality. This lack of effect on educational views is consistent with women in this setting already having more years of schooling than men (12.3 years versus 11.7 years), despite women's otherwise low status. This pattern suggests that women's education, often occurring in gender-segregated schools, does not fundamentally challenge the status quo in the same way that women's leadership or economic roles might.

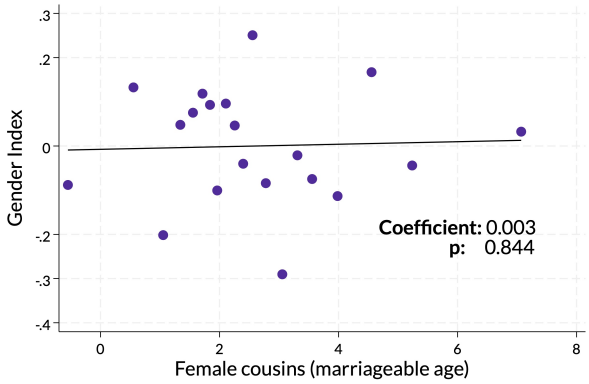
The magnitude of these effects on gender attitudes underscores how breaking out of traditional family structures can reshape women's cultural values. Importantly, the mechanism appears to operate through reduced social insularity rather than through conventional channels of women's empowerment. When women's daily interactions occur primarily within dense family networks that share traditional values, those networks can effectively resist external influences even as women gain

Figure 7: Out-marriage and gender attitudes

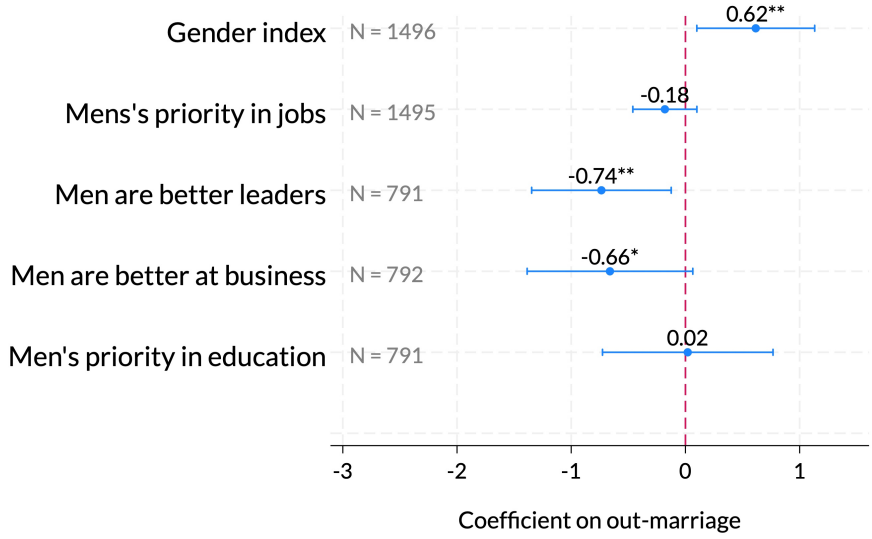
(a) Reduced form



(b) Placebo reduced form



(c) IV coefficients



Notes: Panel (a) shows the reduced form relationship between the number of marriageable male cousins (age-weighted) and the gender attitudes index, controlling for female marriageable-age cousins, age (quadratic), village fixed effects, and birth order. Panel (b) presents a placebo test using female cousins. Panel (c) displays the IV regression coefficients for the gender attitudes index and its components, with 95% confidence intervals. Higher values indicate more progressive attitudes. Robust standard errors are used in all regressions. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

access to education and mass media. Breaking out of these closed social circles through out-marriage appears to be a crucial mechanism for cultural change.

4.2 Effects on Marriage Timing, Education, and Economic Status

The liberalizing effect of out-marriage on gender attitudes is particularly striking because it occurs despite what are typically considered worse outcomes for women's status. Table 1 shows that women who marry outside their extended family experience earlier marriage, attain less education, and match with lower-status husbands. This pattern of results challenges conventional narratives about the relationship between women's empowerment and gender attitudes.

Table 1: Effects of Out-Marriage on Traditional Empowerment Metrics

	Coefficient	SE	N
Panel A: Marriage Timing			
Married by age 16	0.215**	(0.098)	1,538
Age at marriage	-1.322	(0.999)	1,360
Length of engagement (years)	-1.230**	(0.617)	794
Panel B: Education			
Completed grade 12	-0.197*	(0.116)	1,501
Years of education	-0.919	(0.979)	1,501
Panel C: Economic Status			
Husband's education (years)	-1.983*	(1.107)	1,336
Husband's log income	-0.387**	(0.164)	1,027
Woman employed	-0.007	(0.103)	1,527

Notes: Table presents IV estimates of the effect of out-marriage. All specifications include controls for age (quadratic), village fixed effects, birth order, and the number of female marriageable-age cousins. Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Out-marriage leads to more child marriage. The probability of marriage by age 16 increases by 22 percentage points (significant at the 5% level), while engagement lengths decrease by 1.2 years (significant at the 5% level). Despite these significant differences in the timing of marriage arrangements, the overall effect on age at marriage is not statistically significant, suggesting that cousin marriages involve longer engagement periods but similar eventual marriage ages. In cousin marriages, the trust between related families may enable longer engagements without concerns about broken commitments. By contrast, when marrying outside the family, earlier formalization of the marriage may serve as a commitment device in the absence of strong kinship ties.

Out-marriage reduces educational attainment. Women who marry outside their extended family are 21.5 percentage points less likely to complete grade 12 (significant at the 10% level). While the effect on total years of education is substantial at -1.0 years, it is not statistically significant due to larger standard errors. This reduced education likely reflects the impact of earlier marriage, as marriage typically coincides with the end of women's schooling in this context. The negative relationship between out-marriage and education runs counter to typical narratives in development

economics, where delayed marriage is usually associated with higher educational attainment. Yet in our setting, cousin marriage appears to enable additional schooling despite otherwise traditional family structures.

The economic implications of out-marriage similarly run counter to typical empowerment narratives. Women who marry outside their extended family match with husbands who have 2 fewer years of education (significant at the 10% level) and earn approximately 39 percent less (significant at the 5% level). These substantial differences in husband quality suggest that women who marry non-relatives typically match with lower socioeconomic status men. This pattern aligns with ethnographic evidence from Oman and neighboring regions, where cousin marriage is often associated with maintaining family wealth and status. Eickelman (1984) notes that in a neighboring Omani community, high-status families were particularly likely to arrange cousin marriages, while "descendants of ex-slaves tend to marry outside their family clusters and even outside the community, in part because of the small size of most of their family clusters" (p. 96).

Despite these substantial differences in husband status, we find no effect of out-marriage on women's own employment. The point estimate is close to zero and not statistically significant. This suggests that in our setting, marriage patterns have little impact on women's labor force participation, which remains low across all groups.

Taken together, these results present a striking pattern: women who marry outside their extended family hold more progressive gender attitudes despite experiencing what development economists typically consider worse outcomes—earlier marriage, less education, and lower-status husbands. This pattern underscores the importance of social networks in shaping women's views. Even as women who marry non-relatives experience disadvantages in conventional empowerment metrics, their escape from closed family networks appears to enable the development of more progressive gender attitudes.

4.3 Robustness and Threats to Identification

Our finding that marrying outside traditional family networks leads to more progressive gender attitudes is robust to various specification checks and alternative variable definitions. Table A.5 presents our main results alongside several robustness checks and the OLS estimates for comparison. We now address potential threats to identification and explore explanations for discrepancies between OLS and IV estimates.

Alternative Instrument Specifications

The identification strategy in this paper relies on variation in the availability of marriageable-age male cousins. As shown in Panel A of Table A.5, our baseline approach uses an age-weighted measure of male cousins, where cousins are weighted by the empirical probability of the husband-wife age gap in our setting. This specification yields a strong first-stage relationship with an F-statistic of 51.9, well above conventional thresholds for weak instruments.

We explore the robustness of our results to alternative specifications of this instrument. In Panel B, we apply the inverse hyperbolic sine (IHS) transformation to our age-weighted measure to address potential non-linearities in how additional cousins affect marriage patterns. This transformation strengthens our first-stage relationship, with the F-statistic increasing to 76.2. Panel C presents results using a simpler version of our instrument that counts only male cousins zero to six years older than the respondent—the most common age range for spouses in our setting. This specification also yields a strong first stage with an F-statistic of 58.0.

The stability of our results across these alternative specifications suggests that our findings are not sensitive to exactly how we measure the constraints on women's marriage options. Whether we use our baseline age-weighted measure, account for non-linearities through the IHS transformation, or employ a simple count of cousins in the typical spouse age range, we consistently find that marrying outside traditional family networks leads to substantially more progressive gender attitudes. The estimated effect on the patriarchal attitudes index ranges from 0.59 to 0.68 standard deviations across these specifications, all significant at the 5% level.

Intensive Margin Effects

A potential concern with our instrumental variables strategy is that the availability of marriageable male cousins could affect outcomes through two distinct channels: the probability of marrying outside the family (the "extensive margin") and the choice set among potential cousin-husbands (the "intensive margin"). This intensive margin effect could threaten our identification strategy if having more marriageable cousins affects match quality within cousin marriages, potentially violating the exclusion restriction.

To address this concern, we employ multiple approaches. First, we construct an "extensive margin" version of our instrument by restricting the sample to women who have at most 2 marriageable cousins. This approach, shown in Panel D of Table A.5, minimizes the possibility that our instrument captures effects from choosing among multiple potential cousin-husbands, focusing instead on the binary decision of whether to marry outside the family. While this restriction reduces our sample size considerably and weakens the first stage F-statistic to 28.4, the coefficient remains similar to our baseline estimate at 0.76 standard deviations (significant at the 10% level).

Second, we examine whether the marginal effect of male cousins on gender attitudes decreases with the number of cousins, which would be expected if the effect were primarily driven by the extensive margin. Table **??** presents results from a specification that includes a quadratic term for male cousins. The negative coefficient on the squared term suggests that the effect comes predominantly from the first few cousins, consistent with our extensive margin interpretation.

Third, we directly control for measures of husband quality in our main specification, including the husband's years of education. While these are "bad controls" in the sense that cousin-husbands may be systematically different from non-cousin husbands, including them helps assess whether our results are driven by differences in husband characteristics. As shown in Table **??**, the effect of out-marriage on gender attitudes remains significant at 0.46 standard deviations ($p < 0.1$) even

with these controls, suggesting our results are not primarily driven by systematic differences in husband quality.

The consistency of results across these approaches supports our interpretation that the estimated effects are primarily driven by the opportunity to marry outside traditional family networks rather than by the specifics of which cousin one might marry. This aligns with our broader argument that escaping closed family networks, rather than specific match characteristics, drives the development of more progressive attitudes. However, we acknowledge that we cannot completely rule out some contribution from intensive margin effects.

Pre-Marital Effects

An additional threat to our identification strategy is that the number of marriageable cousins might affect gender attitudes through pre-marital channels. We consider two potential mechanisms.

First, the availability of male cousins could directly shape women's gender attitudes through childhood socialization. Women with more male cousins might have different childhood experiences—more mixed-gender play, different expectations, or greater exposure to male perspectives—that could influence their gender attitudes independently of whom they eventually marry.

Second, parents might anticipate their daughter's marriage prospects based on the availability of marriageable cousins and adjust their socialization practices accordingly. For instance, if parents expect their daughter to marry within the family due to a high number of male cousins, they might emphasize values and behaviors deemed appropriate for that anticipated family environment. Conversely, if parents anticipate out-marriage due to a lack of marriageable cousins, they might emphasize different values or provide different guidance.

To address these concerns, we examine how the reduced-form relationship between our instrument and gender attitudes varies with age. Appendix Figure A.5 shows the results of a regression where we interact our instrument (marriageable male cousins) with age, plotting the joint effect at different ages. The liberalizing effect of having fewer marriageable cousins on gender attitudes strengthens with age. This pattern is consistent with an accumulation effect, where the impact grows stronger over time as women spend more years in their respective family environments. If the effect were primarily due to childhood socialization or pre-marriage parental expectations, we would not expect to see this strengthening of the effect with age.

This pattern supports our interpretation that it is the ongoing experience of being embedded in different family structures, rather than pre-marriage differences, that drives the development of more progressive gender attitudes.

OLS versus IV Estimates

A surprising feature of our results is the substantial difference between OLS and IV estimates. As shown in Panel E of Table A.5, OLS estimates of the effect of cousin marriage on the patriarchal attitudes index are close to zero and not statistically significant. This contrasts sharply with our IV estimates, which indicate a large positive effect of out-marriage on progressive attitudes (0.68

standard deviations in the baseline specification). This pattern suggests substantial selection bias in who marries within versus outside their extended family.

The attenuation in OLS estimates appears driven by selection patterns in who marries cousins versus non-relatives. In our data, cousin marriage is positively correlated with family income ($p < 0.01$), and higher income is associated with somewhat more progressive attitudes ($p < 0.01$). This suggests that in our setting, less conservative women may actually be more likely to marry their cousins, contrary to what one might expect. This pattern could reflect that higher-status families, who tend to have somewhat more progressive views, also place greater emphasis on cousin marriage to maintain family wealth and status. This selection pattern aligns with ethnographic evidence from Oman cited above (Eickelman, 1984).

These selection patterns help explain why our OLS estimates understate the true effect of escaping traditional family networks on women's attitudes. Women who marry cousins tend to come from higher-status families with somewhat more progressive baseline attitudes, creating a positive association between cousin marriage and progressive views that masks the causal impact of marriage type. Our instrumental variable approach, by leveraging quasi-random variation in the availability of marriageable cousins, overcomes this selection bias to reveal the true liberalizing effect of escaping traditional family networks.

5 Conclusion

This study demonstrates that traditional family structures—particularly cousin marriage—play a crucial role in maintaining conservative gender attitudes in Oman. Using quasi-random variation in the availability of marriageable male cousins, we find that women who marry outside their extended family networks develop substantially more progressive gender attitudes, scoring 0.7 standard deviations higher on our composite index. This effect operates primarily through changes in social network structure rather than through conventional channels of female empowerment such as education or economic opportunity.

Our findings offer three main contributions to the literature on cultural persistence and gender attitudes. First, we identify social insularity as a key mechanism for the persistence of traditional values. Dense, overlapping family networks effectively filter external influences and reinforce traditional perspectives even as societies modernize along other dimensions. Second, we highlight how marriage patterns structure women's social worlds in ways that can either reinforce or disrupt traditional values. When marriage introduces connections to new family networks, it creates opportunities for exposure to different perspectives and worldviews. Third, our results challenge conventional narratives about the relationship between women's empowerment and cultural values, showing that progressive attitudes can develop independently of—and sometimes despite—traditional metrics like education and delayed marriage.

These findings suggest a complex relationship between marriage patterns, individual outcomes, and cultural change. From a normative standpoint, it is not clear that out-marriage is unam-

biguously better for individual women, despite its liberalizing effect on attitudes. Women who marry outside their extended family networks experience what are typically considered worse outcomes—they marry earlier, attain less education, and match with lower-status husbands. This pattern highlights a potential tension between aggregate progress on female equality (to the extent that women's attitudes matter for social change) and individual well-being. While breaking out of traditional family networks may contribute to cultural change at the societal level, it may simultaneously expose individual women to vulnerabilities associated with early marriage and reduced educational opportunities.

Looking forward, demographic transitions in Oman and similar societies may naturally disrupt traditional marriage patterns. As fertility rates decline—a trend already underway in much of the Middle East—the next generation will have fewer cousins available as potential spouses. Our findings suggest this demographic shift could have profound cultural implications, potentially accelerating the development of more progressive attitudes as more women necessarily marry outside their extended family networks. However, the relationship between declining fertility, marriage patterns, and cultural values deserves further study, particularly given the potential for adaptation through other mechanisms of social control.

Our results also have implications for policy interventions aimed at shifting cultural values in traditional societies. While development efforts often focus on expanding formal education and economic opportunities for women, our findings suggest these interventions may have limited impact when women remain embedded in closed family networks. The persistence of traditional attitudes among educated women who marry cousins highlights how social isolation can trump formal institutions. Interventions that expand women's social circles—whether through community organizations, mixed-gender spaces, or reduction of mobility restrictions—may be crucial for shifting cultural values, even in the presence of rising education levels and increased access to outside information.

In conclusion, this study reveals how marriage networks function as a powerful mechanism for cultural persistence in traditional societies. By determining women's daily social interactions, these networks can either reinforce traditional values or create openings for cultural change. Understanding this mechanism helps explain the uneven pattern of cultural modernization across societies and suggests new approaches for interventions aimed at promoting gender equality.

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A Appendix: Supplementary Tables and Figures

Table A.1: Summary statistics

	Summary Statistics					Relation with instrument (Marriageable cousins)	
Variable	Mean	SD	Min	Max	Obs.	Reg. Coef.	Reg. SE
Panel A: Pre-marital characteristics (Balance vars)							
Age	33.58	6.88	25.00	50.00	1538	(control)	(-)
Height	154.63	6.81	100.00	185.00	1505	0.047	(0.115)
Age of menarche	13.44	1.42	9.00	22.00	1516	0.010	(0.022)
Brothers	4.16	2.29	0.00	14.00	1538	-0.079**	(0.039)
Sisters	4.06	2.41	0.00	14.00	1538	-0.081**	(0.040)
Birth order	3.57	2.24	1.00	13.00	1538	(control)	(-)
Any educ	0.82	0.38	0.00	1.00	1533	-0.004	(0.004)
Father had any educ	0.21	0.41	0.00	1.00	1527	0.001	(0.007)
Father's land >5000 rials	0.37	0.48	0.00	1.00	1538	0.001	(0.007)
Panel B: Cousins (Instrument)							
Total cousins	32.70	19.41	1.00	97.00	1538	3.049***	(0.240)
Male cousins 0-6 yrs older	2.03	1.56	0.00	4.00	1538	0.584***	(0.025)
Male marriageable-age cousins	2.18	1.63	0.00	5.00	1538	0.690***	(0.023)
Female marriageable-age cousins	2.24	2.15	0.00	15.48	1538	(control)	(-)
Panel C: Marriage							
Ever married	0.89	0.32	0.00	1.00	1538	-0.006	(0.006)
Married to first cousin	0.27	0.44	0.00	1.00	1538	0.059***	(0.008)
Married to second cousin	0.10	0.30	0.00	1.00	1538	-0.016***	(0.004)
Married to other relative	0.09	0.29	0.00	1.00	1538	-0.003	(0.005)
Married to non-relative	0.42	0.49	0.00	1.00	1538	-0.045***	(0.008)
Age at marriage	17.52	4.54	9.00	35.00	1360	0.096	(0.072)
Married by 16	0.44	0.50	0.00	1.00	1538	-0.014**	(0.006)
Engagement (yrs)	0.56	1.29	0.00	15.00	794	0.069**	(0.030)
Panel D: Demographics							
Age at first birth	18.52	4.32	10.00	35.00	1276	0.161**	(0.076)
No. of children	5.23	3.49	0.00	16.00	1538	-0.039	(0.038)
Pregnancies	5.65	3.74	0.00	19.00	1383	-0.008	(0.049)
Less than 1km from parents	0.47	0.50	0.00	1.00	1298	0.015*	(0.009)
See parents daily	0.50	0.50	0.00	1.00	707	0.025**	(0.012)
Less than 1km from in-laws	0.37	0.48	0.00	1.00	1063	0.015*	(0.009)
See in-laws daily	0.26	0.44	0.00	1.00	710	0.030**	(0.012)
Panel E: Socioeconomic							
Employed	0.14	0.35	0.00	1.00	1527	0.000	(0.007)
Husband's income (log)	5.74	0.60	2.30	8.86	1027	0.029**	(0.012)
Husb. works w/ your father	0.02	0.14	0.00	1.00	713	0.005	(0.004)
Education (yrs)	7.33	5.26	0.00	16.00	1501	0.059	(0.063)
Completed grade 12	0.35	0.48	0.00	1.00	1501	0.013*	(0.008)

Notes: This table presents summary statistics and the relationship with the instrumental variable (number of marriageable male cousins) for key variables in the study. The first five columns show summary statistics: mean, standard deviation, minimum, maximum, and number of observations. The last two columns present the regression coefficient and standard error from separate regressions of each variable on the instrument, controlling for age (quadratic), village fixed effects, birth order, and the number of marriageable female cousins. Panel A shows balance checks on pre-determined characteristics. Panel B

Table A.2: Summary statistics — Gender attitudes

	Summary Statistics					Relation with instrument (Marriageable cousins)	
Variable	Mean	SD	Min	Max	Obs.	Reg. Coef.	Reg. SE
Panel A: Gender Attitudes							
Job priority to men	2.09	0.57	0.00	3.00	1495	0.012	(0.009)
Disagree strongly	0.01	-	-	-	1495	-	-
Disagree	0.10	-	-	-	1495	-	-
Agree	0.69	-	-	-	1495	-	-
Agree strongly	0.20	-	-	-	1495	-	-
Men are better leaders	2.23	0.69	0.00	3.00	791	0.041**	(0.016)
Disagree strongly	0.01	-	-	-	791	-	-
Disagree	0.13	-	-	-	791	-	-
Agree	0.50	-	-	-	791	-	-
Agree strongly	0.37	-	-	-	791	-	-
Men better at business	1.74	0.74	0.00	3.00	792	0.037**	(0.018)
Disagree strongly	0.03	-	-	-	792	-	-
Disagree	0.34	-	-	-	792	-	-
Agree	0.49	-	-	-	792	-	-
Agree strongly	0.14	-	-	-	792	-	-
Priority in educ to males	1.07	0.82	0.00	3.00	791	-0.001	(0.021)
Disagree strongly	0.25	-	-	-	791	-	-
Disagree	0.48	-	-	-	791	-	-
Agree	0.21	-	-	-	791	-	-
Agree strongly	0.05	-	-	-	791	-	-

Notes: This table presents summary statistics and the relationship with the instrumental variable (number of marriageable male cousins) for attitudes-related variables. The first five columns show summary statistics: mean, standard deviation, minimum, maximum, and number of observations. For categorical variables, the proportion of responses in each category is also provided. The last two columns present the regression coefficient and standard error from separate regressions of each variable on the instrument, controlling for age (quadratic), village fixed effects, birth order, and the number of marriageable female cousins. Panel A shows gender attitudes, including views on job priority, leadership, business aptitude, and education priority. Panel B presents parochialism attitudes, including trust, identity, belonging, immigration views, and job priority for locals. "Marriageable cousins" is a weighted sum of the respondent's male cousins, where weights reflect the suitability of each cousin as a potential husband based on their age difference. Robust standard errors are used in all regressions. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A.3: First-stage regression results

Number of age-weighted cousins:	*(baseline)*	0-6 years older	IHS	0-2, trimmed
	Outcome: Married to a First Cousin			
Male cousins	0.051***	0.036***	0.164***	0.103***
	(0.007)	(0.006)	(0.019)	(0.019)
Female cousins	-0.008	-0.001	-0.017	-0.002
	(0.007)	(0.005)	(0.019)	(0.018)
Observations	1538	1538	1538	726
F-stat on instrument	52.22	39.85	75.77	30.38
Controls	Yes	Yes	Yes	Yes

Notes: This table presents first-stage regression results for the likelihood of marrying a cousin. The dependent variable is an indicator for cousin marriage. Key independent variables include: Male Cousins (0-6 years older), the count of male cousins 0-6 years older; Male Cousins (Age-Weighted), the count weighted by age difference; Male Cousins (IHS), the inverse hyperbolic sine of the age-weighted count; and Male Cousins (0-2, trimmed), the age-weighted count trimmed to 2 cousins. All regressions control for age (quadratic) and village fixed effects, and birth order. Robust standard errors are in parentheses. F-statistics for instruments are shown below each regression. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A.4: First stage by type of cousin

	Married to son of:			
	Mother's sister	Mother's brother	Father's sister	Father's brother
Number of corresponding cousins	0.061***	0.058***	0.049***	0.095***
	(0.011)	(0.012)	(0.011)	(0.015)
Number of other cousins	0.005	-0.001	-0.001	-0.001
	(0.005)	(0.004)	(0.004)	(0.006)
Observations	1538	1538	1538	1538
F-stat on instrument	29.28	22.08	18.62	41.62

Notes: This table presents first-stage regression results for the FBD marriage analysis. Controls for the number of female cousins of the two types separately. F-stat is based on a test of the relevant number of cousins. Number of cousins is age-weighted. All regressions also control for age (quadratic), village fixed effects, and birth order. Robust standard errors are in parentheses. F-statistics for instruments are shown below each regression. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A.5: Results: Gender attitudes index

	Dependent Variable				
	Gender attitudes index	Job priority to men	Men better leaders	Men better in business	Boys' education priority
Panel A: Male Cousins (Age-Weighted), baseline					
Out-marriage	0.616**	-0.180	-0.736**	-0.661*	0.020
	(0.263)	(0.143)	(0.312)	(0.370)	(0.381)
Observations	1496	1495	791	792	791
F-stat on instrument	61.0	60.9	24.7	24.8	24.7
Controls	Yes	Yes	Yes	Yes	Yes
Panel B: Male Cousins (IHS)					
Out-marriage	0.581**	-0.204	-0.486	-0.554	-0.183
	(0.260)	(0.144)	(0.310)	(0.360)	(0.372)
Observations	1496	1495	791	792	791
F-stat on instrument	67.9	67.9	25.5	25.4	25.5
Controls	Yes	Yes	Yes	Yes	Yes
Panel C: Male Cousins (0-6 years older)					
Out-marriage	0.595*	-0.069	-0.698	-1.168**	-0.435
	(0.305)	(0.160)	(0.449)	(0.572)	(0.527)
Observations	1496	1495	791	792	791
F-stat on instrument	49.3	49.2	11.9	11.9	11.9
Controls	Yes	Yes	Yes	Yes	Yes
Panel D: Male Cousins (0-2, trimmed), extensive margin					
Out-marriage	0.925*	-0.366	-0.395	-0.303	-0.631
	(0.540)	(0.311)	(0.874)	(0.905)	(0.978)
Observations	698	697	352	353	352
F-stat on instrument	15.6	15.7	3.4	3.3	3.4
Controls	Yes	Yes	Yes	Yes	Yes
Panel E: OLS					
Out-marriage	-0.034	0.044	-0.025	0.059	-0.101
	(0.053)	(0.028)	(0.052)	(0.054)	(0.062)
Observations	1496	1495	791	792	791
Controls	Yes	Yes	Yes	Yes	Yes

Notes: This table presents instrumental variable (IV) estimates of the effect of cousin marriage on gender attitudes. Each row represents a separate regression, with the dependent variable listed in the first column. The Gender attitudes index is constructed following Anderson (2008) using the four component measures shown in subsequent rows. All dependent variables are standardized to have mean zero and standard deviation one in the control group. The treatment variable, 'Out-marriage', is instrumented with the number of marriageable male cousins, weighted by age difference. All regressions control for birth order, age (quadratic), village fixed effects, and a similarly constructed measure for female cousins. Robust standard errors are reported in parentheses. The First stage F-stat column reports the Kleibergen-Paap rk Wald F statistic. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table A.6: Mechanisms: Parental influence

	Dependent Variable			
	Parents <1km away	See parents daily	In-laws <1km away	See in-laws daily
Panel A: Male Cousins (Age-Weighted), baseline				
Out-marriage	-0.219*	-0.386**	-0.197*	-0.463**
	(0.119)	(0.189)	(0.117)	(0.217)
Observations	1298	707	1063	710
F-stat on instrument	59.4	28.5	57.9	27.3
Controls	Yes	Yes	Yes	Yes
Panel B: Male Cousins (IHS)				
Out-marriage	-0.252**	-0.452**	-0.269**	-0.465**
	(0.125)	(0.203)	(0.121)	(0.188)
Observations	1298	707	1063	710
F-stat on instrument	72.9	32.6	73.6	32.2
Controls	Yes	Yes	Yes	Yes
Panel C: Male Cousins (0-6 years older)				
Out-marriage	-0.234*	-0.541**	-0.185	-0.440*
	(0.132)	(0.276)	(0.143)	(0.255)
Observations	1298	707	1063	710
F-stat on instrument	58.0	16.3	47.5	15.1
Controls	Yes	Yes	Yes	Yes
Panel D: Male Cousins (0-2, trimmed), extensive margin				
Out-marriage	-0.104	-0.134	-0.354	-0.764*
	(0.243)	(0.426)	(0.228)	(0.413)
Observations	626	327	515	333
F-stat on instrument	20.7	6.7	21.8	7.4
Controls	Yes	Yes	Yes	Yes
Panel E: OLS				
Out-marriage	-0.171***	-0.075*	-0.131***	-0.109***
	(0.028)	(0.039)	(0.031)	(0.037)
Observations	1298	707	1063	710
Controls	Yes	Yes	Yes	Yes

Table A.7: Mechanisms: Employment/income

	Dependent Variable			
	Respondent is employed	Husb income (log)	Husb education (yrs)	Husb works with wife's father
Panel A: Male Cousins (Age-Weighted), baseline				
Out-marriage	-0.007	-0.387**	-1.983*	-0.070
	(0.103)	(0.164)	(1.107)	(0.067)
Observations	1527	1027	1336	713
F-stat on instrument	60.0	57.1	65.4	29.6
Controls	Yes	Yes	Yes	Yes
Panel B: Male Cousins (IHS)				
Out-marriage	0.021	-0.340**	-2.373**	-0.060
	(0.097)	(0.163)	(1.115)	(0.065)
Observations	1527	1027	1336	713
F-stat on instrument	66.7	76.0	81.1	34.5
Controls	Yes	Yes	Yes	Yes
Panel C: Male Cousins (0-6 years older)				
Out-marriage	0.000	-0.423**	-2.331**	-0.113
	(0.108)	(0.188)	(1.187)	(0.080)
Observations	1527	1027	1336	713
F-stat on instrument	47.7	52.7	59.0	17.5
Controls	Yes	Yes	Yes	Yes
Panel D: Male Cousins (0-2, trimmed), extensive margin				
Out-marriage	0.006	-0.296	-4.453**	-0.067
	(0.179)	(0.247)	(2.140)	(0.100)
Observations	721	464	653	334
F-stat on instrument	16.2	25.5	23.7	6.9
Controls	Yes	Yes	Yes	Yes
Panel E: OLS				
Out-marriage	-0.019	-0.099**	-1.100***	-0.045***
	(0.018)	(0.042)	(0.236)	(0.015)
Observations	1527	1027	1336	713
Controls	Yes	Yes	Yes	Yes

Table A.8: Mechanisms: Education

	Dependent Variable	
	Education (yrs)	Completed grade 12
Panel A: Male Cousins (Age-Weighted), baseline		
Out-marriage	-0.919	-0.197*
	(0.979)	(0.116)
Observations	1501	1501
F-stat on instrument	57.8	57.8
Controls	Yes	Yes
Panel B: Male Cousins (IHS)		
Out-marriage	-0.976	-0.184*
	(0.988)	(0.105)
Observations	1501	1501
F-stat on instrument	66.7	66.7
Controls	Yes	Yes
Panel C: Male Cousins (0-6 years older)		
Out-marriage	-3.233***	-0.405***
	(1.202)	(0.131)
Observations	1501	1501
F-stat on instrument	47.4	47.4
Controls	Yes	Yes
Panel D: Male Cousins (0-2, trimmed), extensive margin		
Out-marriage	-3.043	-0.202
	(1.962)	(0.187)
Observations	705	705
F-stat on instrument	18.2	18.2
Controls	Yes	Yes
Panel E: OLS		
Out-marriage	-0.137	-0.050**
	(0.199)	(0.022)
Observations	1501	1501
Controls	Yes	Yes

Table A.9: Mechanisms: Fertility

	Dependent Variable					
	Age at marriage (yrs)	Married by 16 (yes/no)	Engagement (yrs)	Age at first birth	Number of children	Times pregnant
Panel A: Male Cousins (Age-Weighted), baseline						
Out-marriage	-1.322	0.209**	-1.230**	-2.276**	0.603	0.105
	(0.999)	(0.100)	(0.617)	(1.091)	(0.578)	(0.681)
Observations	1360	1360	794	1276	1538	1383
F-stat on instrument	66.5	66.5	25.2	54.8	61.1	66.1
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: Male Cousins (IHS)						
Out-marriage	-1.103	0.217**	-1.253**	-1.588	0.871	0.363
	(0.964)	(0.107)	(0.555)	(1.068)	(0.674)	(0.798)
Observations	1360	1360	794	1276	1538	1383
F-stat on instrument	84.8	84.8	26.0	74.1	68.4	82.2
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Male Cousins (0-6 years older)						
Out-marriage	-1.322	0.243*	-0.634	-2.948**	0.496	-0.056
	(1.100)	(0.124)	(0.676)	(1.271)	(0.736)	(0.857)
Observations	1360	1360	794	1276	1538	1383
F-stat on instrument	60.1	60.1	12.3	53.8	48.5	57.8
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel D: Male Cousins (0-2, trimmed), extensive margin						
Out-marriage	-1.557	0.379*	-2.696	-1.329	0.158	-0.207
	(1.692)	(0.203)	(2.174)	(1.761)	(1.390)	(1.498)
Observations	669	669	355	631	726	678
F-stat on instrument	28.1	28.1	3.5	26.3	16.5	25.9
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Panel E: OLS						
Out-marriage	0.114	0.037	-0.203*	-0.048	0.583***	0.063
	(0.219)	(0.025)	(0.111)	(0.235)	(0.122)	(0.162)
Observations	1360	1360	794	1276	1538	1383
Controls	Yes	Yes	Yes	Yes	Yes	Yes

Figure A.1: Map of Bid Bid and Nizwa, Oman

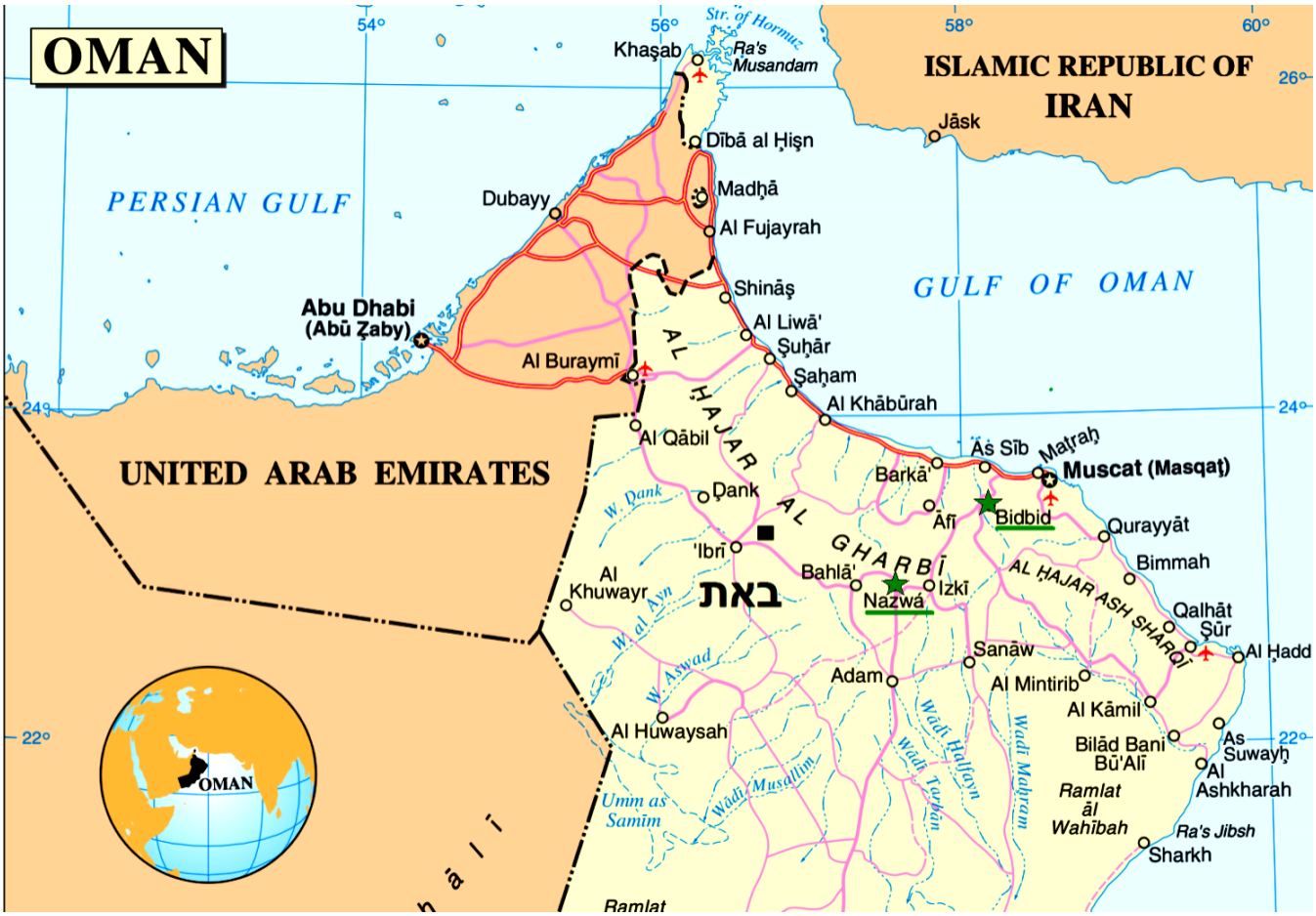


Figure A.2: Breakdown of counterfactual marriage outcomes

[Insert figure here]

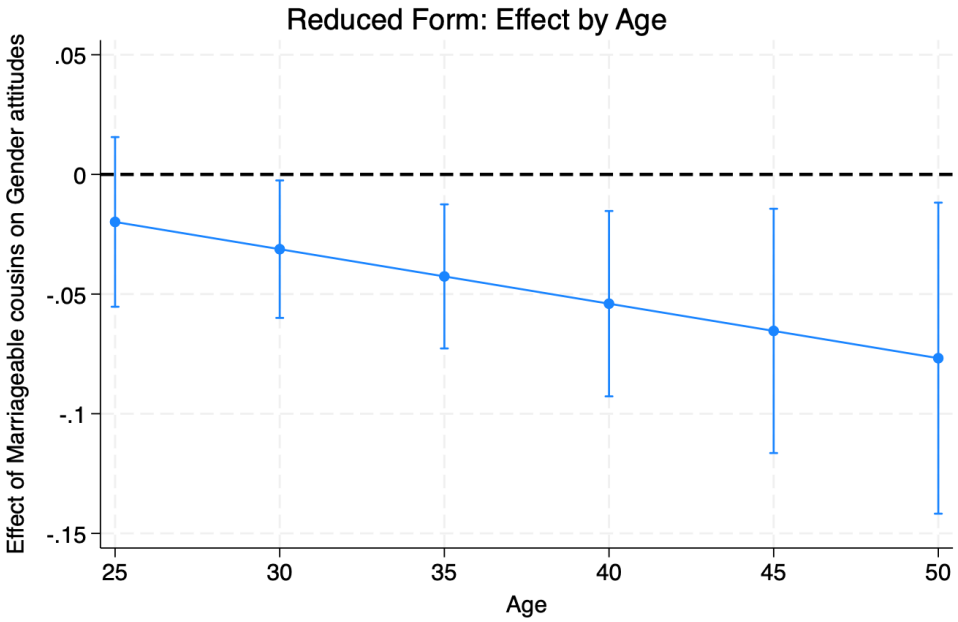
Figure A.3: Smoothed density of husband-wife age differences used for weighting cousins

[Insert figure here]

Figure A.4: Histogram of husband-wife age differences in the Omani sample

[Insert figure here]

Figure A.5: Effect of out-marriage on gender attitudes by age



Notes: Figure shows the marginal effect of out-marriage on the gender attitudes index by age. Points represent the estimated effect at five-year intervals from age 25 to 50, with 95% confidence intervals. All specifications include controls for birth order, village fixed effects, and the number of female marriageable-age cousins.

B Appendix: Survey Questions

For the gender attitudes index, the component questions are four-point Likert-scale responses to the following statements:

- "Men make better political leaders than women do,"
- "University education is more important for a boy than for a girl,"
- "When jobs are scarce, men should have more right to a job than women,"

For the parochialism index, the components include:

- Identification with tribe versus nation,
- Preference for Omanis versus foreigners in job allocation, and
- The in-group versus out-group trust differential.

The trust component involves responses to two questions:

1. "Generally speaking, would you say that most of your family members can be trusted, or that you need to be very careful in dealing with them?" (in-group trust)
2. "Generally speaking, would you say that most people other than your family members can be trusted, or that you need to be very careful in dealing with them?" (out-group trust)